



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

RULE 37 CASE NO. 0269411
STATUS NO. 691707
DISTRICT 09

**APPLICATION OF CHESAPEAKE OPERATING, INC. FOR A RULE 37 EXCEPTION
FOR THE DEER CREEK ESTATES LEASE, WELL NO. 1H, NEWARK, EAST (BARNETT
SHALE) FIELD, TARRANT COUNTY, TEXAS**

APPEARANCES:

FOR APPLICANT:

Glenn Johnson
Erin Rolstad
David Brannen
Bill G. Spencer
Alan Jackson
Steve Mills
Allyson Vistica

APPLICANT:

Chesapeake Operating, Inc.

FOR PROTESTANT:

Carlos Fernandez
Caroline McClimon

PROTESTANT:

Deer Creek Homeowners Association

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

DATE APPLICATION FILED:	February 21, 2011
DATE OF NOTICE OF HEARING:	April 1, 2011
DATE OF HEARING:	May 4, 2011
HEARD BY:	James M. Doherty, Hearings Examiner Andres J. Trevino, Technical Examiner
DATE TRANSCRIPT RECEIVED:	May 18, 2011
DATE PFD CIRCULATED:	August 5, 2011

STATEMENT OF THE CASE

Chesapeake Operating, Inc. (“Chesapeake”) seeks an amended drilling permit pursuant to the provisions of Statewide Rule 37 for the as-drilled location of the Deer Creek Estates Lease, Well No. 1H, a horizontal well in the Newark, East (Barnett Shale) Field, Tarrant County, Texas. The examiners have officially noticed the Drilling Permit (Form W-1) Application Query database for the permitting history of the referenced well.

On February 23, 2010, Chesapeake filed a Form W-1 (Application for Permit to Drill, Recomplete, or Re-Enter) for a new drill permit for the subject well on a 58.65-acre pooled unit. A copy of the plat associated with this application is attached to this proposal for decision as Appendix 1. The section of the well proposed to be perforated in this original application was regular to all surrounding mineral property lines, and the application was approved administratively on February 24, 2010.

On February 10, 2011, Chesapeake filed a Form W-1 for an amended permit for the subject well. This second Form W-1 filing sought to permit the well on a 180.74-acre pooled unit, and the well location was moved to the east side of the unit. A copy of the plat associated with this second application is attached to this proposal for decision as Appendix 2. The acreage added to the unit by this filing lies to the south of the acreage on which the well originally was permitted and has a substantial number of unleased tracts that are internal to the unit. Although the plat showed that the proposed wellbore skirted very near an unleased tract internal to the unit near the terminus of the well, the placement on the plat of the lower perforation (“PLPP”) 330 feet to the north of the unleased tract made the section of the well proposed to be perforated regular to the unleased tract. In practical effect, this created a “no perforation zone” (“NPZ”) of several hundred feet at the toe of the well. The well was also about 50 feet from the eastern boundary of the pooled unit, but Chesapeake was able to give itself a waiver since it was the offset operator to the east. The first amended permit for the well was approved administratively on February 18, 2011. The well was drilled pursuant to this first amended permit, but, according to Chesapeake, has not been perforated.

On February 21, 2011, three days after approval of the first amended permit, Chesapeake filed the present Form W-1 application for a second amended permit for the subject well on a 181.73-acre unit. The plat associated with this filing is attached to this proposal for decision as Appendix 3. The unit and well shown on this plat are essentially the same as the unit and well shown on the plat for the first amended permit, except that the leased acreage within the perimeter of the unit increased by 0.99 acres and the lower perforation (“PLLP”) moved several hundred feet to the south, so that the section of the well now proposed to be perforated is, according to the plat filed with the Form W-1, as close as 16.5 feet to an unleased tract internal to the unit. Essentially, the effect of approval of the present application would be to remove the NPZ near the terminus of the well to which Chesapeake agreed when it obtained the first amended permit for the well. This would gain Chesapeake an additional 461 feet of drainhole to perforate as compared to the section of the well that can be perforated pursuant to the first amended permit.

The Chesapeake application is opposed by the Deer Creek Homeowners' Association, which is the owner of the mineral interest in an unleased tract which is, according to the evidence at the hearing, 41.8 feet from the section of the as-drilled well now proposed to be perforated.¹ As of the date of the hearing, total acreage within the perimeter of the Deer Creek Estates Unit was 292.68 acres, and Chesapeake's leased acreage within the perimeter of the Unit was 196.83 acres. Appendix 4 to this proposal for decision is a copy of Chesapeake's Exhibit No. 7, which is a plat of the Unit coded to show leased and unleased tracts, the unleased acreage owned by Deer Creek Homeowners Association (outlined in blue), and the location of the subject well. Appendix 5 to this proposal for decision is a copy of Chesapeake Exhibit No. 14, which is a similar plat of the Unit showing the subject well, including the section thereof which Chesapeake is authorized to perforate pursuant to the first amended permit for the well (shown in blue) and the NPZ near the terminus of the well (shown in red). This plat confirms that if the NPZ were removed, as proposed, the perforated section of the well would be 41.8 feet from the unleased tract owned by Deer Creek Homeowners Association.

DISCUSSION OF THE EVIDENCE

Chesapeake

A Chesapeake landman presented a plat of the Deer Creek Estates Unit showing the separate tracts within the perimeter of the pooled unit that are leased and unleased and the as-drilled location of Well No. 1H on the Unit, as well as a listing by tract number and owner of the leased and unleased tracts within the unit. The updated plat showed that as of the date of the hearing, total acreage within the perimeter of the Unit was 292.68 acres, and Chesapeake's leased acreage within the perimeter of the Unit was 196.83 acres (67.3%). There are about 526 separate tracts within the perimeter of the Unit, of which about 370 are leased to Chesapeake (70.3%). Chesapeake was continuing to attempt to lease additional tracts within the perimeter of the Unit at the time of the hearing. At an earlier time, Chesapeake made an offer to lease the acreage owned by the Deer Creek Homeowners Association, but no agreement was reached. Chesapeake's landman who testified at the hearing was not familiar with the terms of the offer. Because of pending litigation, Chesapeake has made no recent contact with Deer Creek Homeowners Association.

A regulatory consultant for Chesapeake also presented a plat of the Deer Creek Estates Unit updated through May 3, 2011. He confirmed that the purpose of the present application is to remove the NPZ imposed on the first amended permit for the Deer Creek Estates Unit, Well No. 1H. Between February 21, 2011, when a Form W-1 and plat were filed for the first amended permit and May 3, 2011, Chesapeake's leased acreage within the perimeter of the Unit increased from 181.73 acres to 196.83 acres (8.3%). Chesapeake's regulatory consultant also presented a plat of the Unit on which were delineated the boundaries of tracts owned by Deer Creek Homeowners Association.

¹ The as-drilled location of the well appears to have deviated a few feet to the east of the location shown on the plats associated with the present application and the application that led to approval of the first amended permit.

A list of unleased tracts indicated that Deer Creek Homeowners Association is the owner of a total of 32.89 unleased acres within the perimeter of the Unit.²

Special field rules for the Newark, East (Barnett Shale) Field provide for 330' lease line spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the distance to the nearest perforation in the well, and not based on the penetration point or terminus. Where an external casing packer is placed in a horizontal well and cement is pumped above the external casing packer to a depth above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the top of the external casing packer or the closest open hole section in the Barnett Shale. The standard drilling and proration unit for the Newark, East (Barnett Shale) Field is 320 acres. An operator is permitted to form optional drilling units of 20 acres.

A Chesapeake geologist presented a structure map on top of the Barnett Shale in the area of the Deer Creek Estates Unit, a stratigraphic cross section of two wells on either side of the Unit with datum hung on the top of the Barnett Shale, and an isopach map showing thickness of the Barnett Shale in the area of the Unit. The Barnett Shale has reasonably uniform thickness in this area, and Chesapeake anticipates a thickness of about 375 feet beneath the Deer Creek Estates Unit.

A Chesapeake reservoir engineer presented a plot of drainhole length versus estimated ultimate recoveries for 110 Barnett Shale wells within 2.5 miles of the Deer Creek Estates Unit. The purpose of this plot was to arrive at an estimate of the amount of gas that will be recovered by each foot of horizontal drainhole. A least squares fit of the data points on the plot developed a line through the data points with a positive slope of 1.4069 and an intercept of 299.09. The implication of this plot is that a vertical well would have an estimated ultimate recovery of about 299.09 MMCF of gas and as the drainhole length of a horizontal well increases, the well's estimated ultimate recovery also increases. According to this study, every foot of horizontal drainhole ultimately will recover about 1.4069 MMCF. The wells in this study are Chesapeake wells, and the drainhole length of the study wells was determined from in-house records. Estimated ultimate recoveries were determined by decline curve. Chesapeake's reservoir engineer did not have available at the hearing the raw data and calculations that support the plot.

Chesapeake's reservoir engineer also presented a volumetric calculation of gas in place beneath leased and unleased tracts in the Deer Creek Estates Unit. Making assumptions from pilot hole data as to petrophysical parameters of the reservoir, and based on 292.680 leased and unleased acres within the perimeter of the Unit and a formation thickness of 375 feet, Chesapeake's reservoir engineer estimated that total gas in place is 63.629 BCF. Assuming a recovery factor of 45%, the current recoverable gas beneath the leased and unleased tracts within the perimeter of the Unit is about 28.633 BCF. However, the drilling of 5-6 horizontal wells on the Unit would be necessary

² This does not include 0.74 acres for which the owner is listed as "Deer Creek Estates, Inc."

to achieve a 45% recovery factor, and Chesapeake's reservoir engineer did not calculate the current recoverable reserves beneath Chesapeake's leased acreage only. Chesapeake's reservoir engineer also conceded that the acreage within the perimeter of the Unit in and south of the Deer Creek Homeowners Association tracts cannot be developed at all without additional leasing. No gas will be recovered from areas of the Unit that cannot be developed. He estimated that the gas in place beneath the acreage in the Unit that lies north of the Deer Creek Homeowners Association tracts accounts for about one-fourth of the gas in place beneath the leased and unleased acreage within the perimeter of the entire Unit.

If the NPZ restriction on the subject well were removed as proposed, Chesapeake would be able to perforate an additional 461 feet of drainhole as compared to the section of the drainhole that can be perforated under the first amended permit for the well. Drainhole length of the well without the NPZ would be 2,234 feet. Based on the recovery estimated by Chesapeake's plot of drainhole length versus estimated ultimate recoveries for the 110 study wells within 2.5 miles of the Deer Creek Estates Unit, the unrestricted well would recover about 3.44 BCF. Retaining the NPZ in the first amended permit for the well would allow 1,772 feet of drainhole to be perforated, and, as restricted, the well would recover an estimated 2.79 BCF. Thus, Chesapeake estimates that removal of the NPZ would permit the subject well to recover about 649 MMCF more than the well would recover if the NPZ were retained.

If the NPZ restriction is removed, the subject well will drain gas from beneath the unleased acreage owned by Deer Creek Homeowners Association. If the NPZ is removed, Chesapeake would be allowed to perforate the subject well as close as 41.8 feet from the Deer Creek Homeowners Association tract, and Chesapeake generally anticipates that such a well will effectively and efficiently drain an area of about 250-300 feet on either side of the wellbore. There are regular locations in the area of the Unit north of the Deer Creek Homeowners Association acreage where horizontal wells might be drilled, but these wells at regular locations would not recover the same gas that is beneath the area of the unit affected by the NPZ. Chesapeake believes that approval of the requested Rule 37 exception is necessary to provide Chesapeake with a reasonable opportunity to recover its fair share of gas and avoid confiscation.

Deer Creek Homeowners Association

Deer Creek Homeowners Association did not present evidence, other than through cross-examination of Chesapeake's witnesses and one cross-examination exhibit consisting of a September 29, 2008, "Supplemental Agreement Regarding Gas Lease" executed by Chesapeake and Deer Creek Estates Residents Oil & Gas Lease Committee. This "Supplemental Agreement Regarding Gas Lease" is the subject of pending litigation, but Deer Creek Homeowners Association believes that the agreement committed Chesapeake to lease interests owned by its residential members on terms that included, among other things, a signing bonus of \$27,200 per net mineral acre and a 25.25% royalty. Deer Creek Homeowners Association takes the position that this Rule 37 application is an attempt by Chesapeake to "circumvent" the pending litigation, and the lease subsequently offered

by Chesapeake compares unfavorably to the lease terms described in the “Supplemental Agreement Regarding Gas Lease.”

Deer Creek Homeowners Association also contends that regular and less irregular locations exist on the Deer Creek Estates Unit where a well could be drilled to give Chesapeake a reasonable opportunity to recover the hydrocarbons beneath the Unit, and Chesapeake did not prove that the granting of a Rule 37 exception to remove the NPZ from Chesapeake’s first amended permit for the subject well is necessary to prevent waste or confiscation. Furthermore, the protestant believes that the Commission sanctioned the use of NPZs to protect the correlative rights of mineral owners such as Deer Creek Homeowners Association.

EXAMINERS’ OPINION

A Rule 37 application may be approved where a well spacing exception is shown to be necessary to prevent waste or confiscation. In this case, Chesapeake contends that the requested Rule 37 exception required for the removal of the NPZ imposed on the first amended permit for the Deer Creek Estates Unit, Well No. 1H is necessary to prevent confiscation.³ A confiscation theory is based on the principle that an owner of oil and gas is entitled to an opportunity to recover the reserves underlying his tract, and any denial of that opportunity amounts to confiscation. *Atlantic Refining Co. v. Railroad Commission*, 346 S.W.2d 801 (Tex. 1961); *Imperial American Resources Fund, Inc. v. Railroad Commission*, 557 S.W.2d 280 (Tex. 1977). When the subject tract is capable of supporting a regular location, the applicant for a Rule 37 exception based on confiscation must prove that the proposed irregular location is necessary because of surface or subsurface conditions and that the proposed location is reasonable. To do this, the applicant must show that it is not feasible to recover its fair share of hydrocarbons from regular locations.

This case demonstrates the difficulty in applying traditional Rule 37 concepts to Barnett Shale development by horizontal wells on pooled units consisting in major part of hundreds of residential tracts in urban areas. While the boundaries of the pooled unit are important in any determination of whether regular locations exist for the drilling of horizontal wells and to the determination of the applicant’s “fair share” of reserves as relevant to a confiscation theory, the applicant for a Rule 37 exception gets to draw the boundaries of the unit for permitting purposes, even in the situation where the unit has not yet legally been formed out in the real world.⁴ How the unit boundaries are drawn can change the picture dramatically as it relates to the necessity of a Rule

³ Chesapeake did not contend that the requested exception is necessary to prevent waste. An applicant seeking a Rule 37 exception based on a waste theory must show, among other things, that unusual conditions, different from conditions in adjacent parts of the field, exist under the tract for which the exception is sought. Chesapeake did not attempt to prove unusual conditions beneath the Deer Creek Estates Unit.

⁴ There is no evidence in this case as to whether the Deer Creek Estates Unit shown on Chesapeake’s plats has actually been formed as a pooled unit by the filing of a unit declaration in the property records of Tarrant County or is simply a unit proposed for purposes of permitting Well No. 1H.

37 spacing exception. This is plainly demonstrated by a comparison of the plat of the 58.65-acre Deer Creek Estates pooled unit shown on the plat associated with the original Form W-1 filed for Well No. 1H (Appendix 1 to this proposal for decision) with the pooled unit (292.68 acre perimeter) shown on the plat associated with the present Form W-1 seeking a second amended permit for the same well (Appendix 3 to this proposal for decision). Furthermore, the picture that is presented as to the need for a Rule 37 exception is affected by the degree of success the applicant has had in leasing within the perimeter of the unit and the timing of the filing of the Rule 37 application. Ironically, relatively little success in leasing within the perimeter of the unit (32.7% of the acreage within the perimeter of the Deer Creek Estates Unit remains unleased), or filing of an application before leasing activity has been completed, may actually serve to bolster the applicant's argument that regular locations are limited or non-existent.

In the opinion of the examiners, approval of a Rule 37 exception to accomplish removal of the NPZ from the Deer Creek Estates Unit Well No. 1H has not been shown to be necessary to prevent confiscation for several reasons. It is impossible to determine from Chesapeake's evidence that elimination of the NPZ is necessary to provide Chesapeake with an opportunity to recover its "fair share" of gas for purposes of a confiscation theory. "Fair share" is measured by current recoverable reserves. Chesapeake presented its reservoir engineer's calculation of current recoverable gas beneath the entire 292.68 acres within the perimeter of the Deer Creek Estates Unit, but 95.85 of these acres are unleased. Chesapeake's "fair share" does not properly include current recoverable gas beneath *unleased* tracts. The amount of current recoverable gas beneath Chesapeake's *leased* acreage was not quantified in the testimony and exhibits. Even if the current recoverable gas beneath Chesapeake's leased acreage could be extrapolated from data provided by Chesapeake's reservoir engineer, it could not be concluded that elimination of the NPZ from Well No. 1H is necessary to enable Chesapeake to recover its "fair share" for the following reasons.

Chesapeake's calculation of current recoverable reserves depends entirely upon the assumption of a 45% recovery factor, and the 45% recovery factor depends on the number of wells that can be drilled on the unit.⁵ Chesapeake's reservoir engineer testified that five or six wells would need to be drilled on the unit to achieve a 45% recovery factor. But he also testified that the acreage in the unit south of the Deer Creek Homeowners Association acreage (see Appendix 4 to this

⁵ The 45% recovery factor assumed by Chesapeake to calculate current recoverable reserves may be overly optimistic. Commission findings of fact in final orders in other recent Barnett Shale Rule 37 cases assume materially lower recovery factors. See, for example, Rule 37 Case No. 0264838; *Application of XTO Energy, Inc. for A Rule 37 Exception for the Eden Southeast Unit, Well No. 1H, Newark, East (Barnett Shale) Field, Tarrant County, Texas* (FOF # 18 in Final Order served 09/22/10)(20% recovery factor); Rule 37 Case No. 0265651; *Application of XTO Energy, Inc. for A Rule 37 Exception for the TWU B Unit Lease, Well No. 1H, Newark, East (Barnett Shale) Field, Tarrant County, Texas* (FOF #11 in Final Order served 12/15/10)(30% recovery factor); Rule 37 Case No. 0265718; *Application of XTO Energy, Inc. for A Rule 37 Exception for the Carter SE Unit, Well No. B 2H, Newark, East (Barnett Shale) Field, Tarrant County, Texas* (FOF #21 in Final Order served 11/03/10)(30% recovery factor); and Rule 37 Case No. 0266558; *Application of XTO Energy, Inc. for A Rule 37 Exception for the Sue Barnett Unit, Well No. 4H, Newark, East (Barnett Shale) Field, Tarrant County, Texas* (FOF #11 in Final Order served 06/28/11)(30% recovery factor).

proposal for decision), which constitutes about three-fourths of the entire amount of acreage within the perimeter of the unit, cannot be developed at all with horizontal wells under current circumstances because of the number and location of unleased tracts in this area. Because by Chesapeake's reckoning, current recoverable gas is calculated on the basis of a recovery factor dependent on the wells that can be drilled on the unit, gas beneath the portion of the unit that cannot be developed with wells at all, even with a Rule 37 exception, is not properly included in "current recoverable gas" or Chesapeake's "fair share" for purposes of a Rule 37 confiscation theory.⁶

The only area of the Deer Creek Estates Unit that *is* subject to current development with horizontal wells is the area of the unit north of the Deer Creek Homeowners Association acreage, which includes the location of Well No. 1H as authorized by the first amended permit for the well. The current recoverable reserves beneath this portion of the unit were not quantified in Chesapeake's evidence. There are regular locations to the west of Well No. 1H where at least one more horizontal well might be drilled on the northern portion of the unit, and it cannot be determined that elimination of the NPZ from Well No. 1H is necessary for Chesapeake to recover the current recoverable reserves (its "fair share") beneath this drillable portion of the unit.

Chesapeake's reservoir engineer estimated that the drillable portion of the unit north of the Deer Creek Homeowners Association acreage constitutes about one-fourth of the total amount of acreage with the entire unit perimeter. Total gas in place of 63.629 BCF was calculated according to the acreage in the unit, and so it could be inferred that about one-fourth of the gas in place, or about 15.9 BCF is beneath the drillable portion of the unit. The 45% recovery factor assumed by Chesapeake's reservoir engineer was based on the drilling of five or six wells on the unit, but the drillable portion of the unit will not accommodate five or six horizontal wells. If Chesapeake's policy of spacing horizontal wells about 500 feet apart is honored, it is likely that no more than two horizontal wells can be drilled on this area of the unit. Chesapeake did not establish a reliable recovery factor for gas in place beneath the drillable part of the Unit that would enable the examiners to reach any conclusion about Chesapeake's "fair share" of gas beneath this part of the Unit. Chesapeake estimates that even with retention of the NPZ, Well No. 1H will recover about 2.8 BCF. Since there are regular locations on the drillable portion of the unit to the west of Well No. 1H where at least one additional horizontal well can be drilled, it is not possible to conclude that removal of

⁶ Development of the area south of the Deer Creek Homeowners Association acreage and recovery of the amount of gas beneath Chesapeake's leased tracts in this area will need to await another day when Chesapeake's leasing activity in the area has progressed to the point that the area can be accessed with horizontal wells. Chesapeake is not entitled to a Rule 37 exception permitting drainage of protestant's gas on the basis of a "fair share" equation that includes gas beneath the portion of the Unit that cannot be developed at all.

the NPZ from Well No. 1H is necessary to provide Chesapeake with a reasonable opportunity to recover its “fair share” of gas beneath the drillable portion of the unit.⁷

Neither did Chesapeake prove that the location of Well No. 1H will be “reasonable,” as required by the test for proving confiscation, if the NPZ is removed. Although regular locations existed in the same area of the Deer Creek Estates Unit, Chesapeake made the choice to drill the first wellbore on the Unit crowding the eastern boundary of the Unit, where Chesapeake was its own offset, and also crowding unleased tracts interior to the Unit. It avoided a contested Rule 37 case for the first amended permit for the well by granting itself a waiver and by imposing a NPZ near the terminus of the well to avoid protests from the mineral owners of the unleased tracts. If the NPZ is removed, Chesapeake will be able to perforate the well as close as 41.8 feet to the Deer Creek Homeowners Association tract. Based on the testimony of Chesapeake’s reservoir engineer that horizontal wells in the Barnett Shale are expected to efficiently and effectively drain an area extending 250-300 feet on either side of the wellbore, it is apparent that if the NPZ is removed, Well No. 1H will drain the Deer Creek Homeowners Association tract.⁸ Chesapeake is not entitled to remove the self-imposed NPZ simply because it elected to drill the well another 461 feet notwithstanding the fact that the NPZ prohibited perforations there. Furthermore, removal of the NPZ is not necessary to the economic success of Well No. 1H. Chesapeake estimates that the well, even as NPZ restricted, will recover about 2.8 BCF. The examiners have officially noticed that in Oil & Gas Docket No. 09-0265924⁹, Chesapeake submitted evidence that for a typical Barnett Shale well with typical costs, assuming an average gas price of \$5.50 per MCF, a recovery of 2.225 BCF is required to achieve a 10% rate of return on investment.

Based on the record in this case, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

⁷ Chesapeake’s reservoir engineer contended that the requested Rule 37 exception is necessary to prevent confiscation of the gas beneath the portion of Well No. 1H currently subject to the NPZ, but this is the wrong focus. Pursuant to its confiscation theory, Chesapeake is entitled to an opportunity to recover its “fair share” of gas beneath the drillable portion of the unit, or its equivalent in kind, but not any particular molecules of gas from any particular geographical location within the unit. Furthermore, the gas in the area of the NPZ is made up in significant part of gas which is Deer Creek Homeowner’s Association’s gas, not Chesapeake’s.

⁸ If NPZs are not acceptable as a means of protecting the correlative rights of offsetting unleased mineral interest owners, arguably they are not acceptable at all because they surely do not prevent waste.

⁹ Oil & Gas Docket No. 09-0265924; *Application of Chesapeake Operating, Inc. Pursuant to the Mineral Interest Pooling Act for the Formation of the Proposed 50.371-Acre Glen Garden MIPA Unit, Well No. 1H, Newark, East (Barnett Shale) Field, Tarrant County, Texas* (PFD issued May 12, 2011, pending issuance of a Final Order).

FINDINGS OF FACT

1. At least ten (10) days notice of this hearing was provided to all affected persons as defined by Statewide Rule 37(a)(2) and 37(a)(3) and the special field rules for the Newark, East (Barnett Shale) Field.
2. Chesapeake Operating, Inc. ("Chesapeake") seeks an exception to Statewide Rule 37 for the as-drilled location of the Deer Creek Estates Unit, Well No. 1H ("subject well"), Newark, East (Barnett Shale) Field, Tarrant County, Texas.
3. On February 23, 2010, Chesapeake filed a Form W-1 (Application for Permit to Drill, Recomplete, or Re-Enter) for a new drill permit for the subject well on a 58.65-acre pooled unit. A copy of the plat associated with this application is attached to this proposal for decision as Appendix 1 which is incorporated into this finding by reference. The section of the well proposed to be perforated in this original application was regular to all surrounding mineral property lines, and the application was approved administratively on February 24, 2010.
4. On February 10, 2011, Chesapeake filed a Form W-1 for an amended permit for the subject well. This second Form W-1 filing sought to permit the well on a 180.74-acre pooled unit, and the well location was moved to the east side of the unit. A copy of the plat associated with this second application is attached to this proposal for decision as Appendix 2 which is incorporated into this finding by reference.
 - a. The acreage added to the unit by this filing lies to the south of the acreage on which the well originally was permitted and has a substantial number of unleased tracts that are internal to the unit.
 - b. Although the plat showed that the proposed wellbore skirted very near an unleased tract internal to the unit near the terminus of the well, the placement on the plat of the lower perforation ("PLPP") 330 feet to the north of the unleased tract made the section of the well proposed to be perforated regular to the unleased tract. In practical effect, this created a "no perforation zone" ("NPZ") of several hundred feet at the toe of the well.
 - c. The well was also about 50 feet from the eastern boundary of the pooled unit, but Chesapeake was able to give itself a waiver since it was the offset operator to the east.
 - d. The first amended permit for the well was approved administratively on February 18, 2011.

5. As of the date of the hearing, the subject well had been drilled pursuant to the first amended permit, but, according to Chesapeake, had not been perforated.
6. On February 21, 2011, three days after approval of the first amended permit, Chesapeake filed the present Form W-1 application for a second amended permit for the subject well on a 181.73-acre unit. The plat associated with this filing is attached to this proposal for decision as Appendix 3 which is incorporated into this finding by reference.
 - a. The unit and well shown on the plat associated with the current filing are essentially the same as the unit and well shown on the plat for the first amended permit, except that the leased acreage within the perimeter of the unit increased by 0.99 acres and the lower perforation ("PLL") moved several hundred feet to the south, so that the section of the well now proposed to be perforated is, according to the plat filed with the Form W-1, is as close as 16.5 feet to an unleased tract internal to the unit.
 - b. The purpose of the current application is to remove the NPZ near the terminus of the well to which Chesapeake agreed when it obtained the first amended permit for the well. This would gain Chesapeake an additional 461 feet of drainhole to perforate as compared to the section of the well that can be perforated pursuant to the first amended permit.
7. The Chesapeake application is opposed by the Deer Creek Homeowners Association, which is the owner of the mineral interest in an unleased tract which is 41.8 feet from the section of the as-drilled well now proposed to be perforated. Deer Creek Homeowners Association is the owner of at least 32.89 acres within the perimeter of the Deer Creek Estates Unit.
8. As of the date of the hearing, total acreage within the perimeter of the Deer Creek Estates Unit was 292.68 acres, and Chesapeake's leased acreage within the perimeter of the Unit was 196.83 acres (67.3%). Appendix 4 to this proposal for decision, incorporated into this finding by reference, is a copy of Chesapeake's Exhibit No. 7, which is a plat of the Unit coded to show leased and unleased tracts, the unleased acreage owned by Deer Creek Homeowners Association (outlined in blue), and the location of the subject well.
9. Appendix 5 to this proposal for decision, incorporated into this finding by reference, is a copy of Chesapeake Exhibit No. 14, which is a similar plat of the Unit showing the subject well, including the section thereof which Chesapeake is authorized to perforate pursuant to the first amended permit for the well (shown in blue) and the NPZ near the terminus of the well (shown in red).

10. Special field rules for the Newark, East (Barnett Shale) Field provide for 330' lease line spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the distance to the nearest perforation in the well, and not based on the penetration point or terminus. Where an external casing packer is placed in a horizontal well and cement is pumped above the external casing packer to a depth above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the top of the external casing packer or the closest open hole section in the Barnett Shale. The standard drilling and proration unit for the Newark, East (Barnett Shale) Field is 320 acres. An operator is permitted to form optional drilling units of 20 acres.
11. The Barnett Shale has reasonably uniform thickness in this area, and Chesapeake anticipates a thickness of about 375 feet beneath the Deer Creek Estates Unit based on a structure map on top of the Barnett Shale in the area, a stratigraphic cross section of two wells on either side of the Unit with datum hung on the top of the Barnett Shale, and an isopach map showing thickness of the Barnett Shale in the area.
12. A least squares fit of the data on a plot of drainhole length versus estimated ultimate recoveries for 110 Barnett Shale wells within 2.5 miles of the Deer Creek Estates Unit implies that a vertical well drilled in the area would have an estimated ultimate recovery of about 299.09 MMCF of gas and every foot of horizontal drainhole ultimately will recover about 1.4069 MMCF.
13. Based on assumed petrophysical parameters of the reservoir and reservoir thickness of 375 feet, volumetrically calculated gas in place beneath the entire perimeter of the Deer Creek Estates Unit, including the unleased tracts, is an estimated 63.629 BCF.
14. Based on Chesapeake's doubtful assumption of a 45% recovery factor, current recoverable gas beneath the entire perimeter of the Deer Creek Estates Unit, including the unleased tracts, is an estimated 28.633 BCF. If the validity of a 45% recovery factor is assumed, drilling of five or six horizontal wells on the Unit would be necessary to achieve this recovery factor.
15. Chesapeake did not offer evidence directly quantifying gas in place or current recoverable gas beneath its leased tracts within the Deer Creek Estates Unit.
16. Under current circumstances, the area of the Deer Creek Estates Unit lying to the north of the Deer Creek Homeowners Association acreage, as shown on Appendix 4 to this proposal for decision, is the only area of the Unit on which horizontal wells can be drilled ("drillable part of the Unit"). This area accounts for about one-fourth of the acreage within the entire perimeter of the Unit.

17. The area of the Deer Creek Estates Unit from the Deer Creek Homeowners Association acreage to the south, comprising about three-fourths of the acreage within the entire perimeter of the Unit, cannot be developed at all with horizontal wells due to the number and location of tracts that are unleased. No gas is “currently recoverable” from this area of the Unit.
18. Chesapeake’s “fair share” of gas, within the meaning of the legal confiscation theory, is measured by the amount of current recoverable gas beneath the drillable portion of the Deer Creek Estates Unit which is under lease to Chesapeake.
19. Chesapeake did not offer evidence directly quantifying gas in place or current recoverable gas beneath the drillable portion of the Deer Creek Estates Unit.
20. Assuming that the drillable part of the Deer Creek Estates Unit constitutes one-fourth of the total acreage within the perimeter of the Unit and that one-fourth of the gas in place calculated by Chesapeake on the basis of acreage is beneath the drillable part of the Unit, gas in place beneath the drillable acreage is about 15.9 BCF.
21. Chesapeake’s assumed recovery factor of 45% to estimate current recoverable gas is based on the drilling of five or six wells on the Deer Creek Estates Unit. Chesapeake’s practice is to space horizontal wells about 500 feet apart. If this practice is honored, it is not possible to drill five or six horizontal wells on the drillable part of the Unit.
22. Given the location of the as-drilled Well No. 1H, if Chesapeake’s practice of spacing horizontal wells about 500 feet apart is honored, it is likely that no more than two horizontal wells can be drilled on the drillable part of the Unit.
23. Chesapeake did not establish a reliable recovery factor for gas in place beneath the drillable part of the Unit.
24. There are regular locations on the drillable part of the Unit where an additional horizontal well can be drilled.
25. Chesapeake did not quantify its “fair share” of gas beneath the drillable part of the Unit.
26. Well No. 1H, even as “no perforation zone” restricted, will recover an estimated 2.8 BCF.
27. Chesapeake did not establish that Well No. 1H, as “no perforation zone” restricted, and an additional horizontal well that can be drilled at a regular location on the drillable part of the Unit will not provide Chesapeake with a reasonable opportunity to recover its “fair share” of gas.

28. Chesapeake did not establish that removal of the “no perforation zone” restriction from Well No. 1H is necessary to provide Chesapeake with a reasonable opportunity to recover its “fair share” of gas.
29. Chesapeake did not establish that the location of Well No. 1H will be “reasonable” if the NPZ is removed.
 - a. Although regular locations existed in the same area of the Deer Creek Estates Unit, Chesapeake made the choice to drill the first wellbore on the Unit crowding the eastern boundary of the Unit, where Chesapeake was its own offset, and also crowding unleased tracts interior to the Unit. It avoided a contested Rule 37 case for the first amended permit for the well by granting itself a waiver and by imposing a NPZ near the terminus of the well to avoid protests from the mineral owners of the unleased tracts.
 - b. If the NPZ is removed, Chesapeake will be able to perforate the well as close as 41.8 feet to the Deer Creek Homeowners Association tract. According to Chesapeake, horizontal wells in the Barnett Shale are expected to efficiently and effectively drain an area extending 250-300 feet on either side of the wellbore. If the NPZ is removed, Well No. 1H will drain the Deer Creek Homeowners Association tract.
 - c. Even as NPZ restricted, Well No. 1H will recover about 2.8 BCF. Removal of the NPZ is not necessary to the economic success of this well.

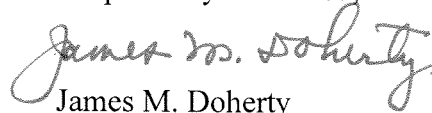
CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued by the Railroad Commission to appropriate persons legally entitled to notice.
2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in this hearing have been performed.
3. Chesapeake Operating, Inc., did not establish that approval of a Rule 37 exception to accomplish removal of the no perforation zone from the Deer Creek Estates Lease, Well No. 1H is necessary to prevent waste, prevent confiscation, or protect correlative rights.

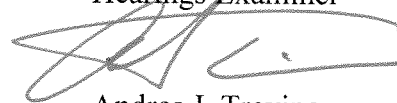
RECOMMENDATION

The examiners recommend that the application of Chesapeake Operating, Inc., in this docket be denied.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "James M. Doherty".

James M. Doherty
Hearings Examiner

A handwritten signature in cursive script, appearing to read "Andres J. Trevino".

Andres J. Trevino
Technical Examiner